

NEW SPECIES OF ANCYLIDÆ.

BY BRYANT WALKER.

NEOPLANORBIS SMITHII n. sp. Pl. IX, figs. 1 and 2.

Shell minute, planorboid, perforate, slightly convex above and below; periphery obtusely angulate; thin, translucent, whitish, shining with a silky luster from the fine, closely set, regular lines of growth. No trace of spiral sculpture. Whorls 2, rapidly enlarging; apex sunken; the last half of the first whorl elevated above the outline of the body whorl; apical whorl convex, the convexity rapidly diminishing towards the aperture; suture well impressed, rising somewhat at the aperture; aperture large, oblique, slightly expanded, equally curved above and below; columellar margin dilated, straight and vertical, callously thickened below, smooth; umbilicus a mere perforation.

Alt. 1, diam. 2 mm.

Types (No. 27149, Coll. Walker) from the Coosa river at Higgin's Ferry, Chilton Co., Ala. Co-types in the collection of T. H. Aldrich, Geo. H. Clapp, John B. Henderson, Jr., and the Philadelphia Academy.

This little species differs from *tantillus* and all the other known forms of the genus by the entire absence of spiral sculpture and the elevation of the spire above the level of the body whorl. The animal is black and the shell consequently appears of that color until cleaned.

NEOPLANORBIS UMBILICATUS n. sp. Pl. IX, figs. 3 and 4.

Shell minute, planorboid, umbilicate, convex above and below, but flattened above as it approaches the aperture and obliquely flattened below the periphery; periphery obtusely carinate; brownish horn-color; lines of growth fine and regular; surface sculptured by raised spiral lines, which are heavier below than above the periphery. Whorls 2, rapidly enlarging, apex sunken; apical whorl very convex; body whorl nearly flat in the sutural region, but curving down rapidly toward the peripheral carination; suture well impressed and depressed below the periphery at the aperture; aperture large, wider than high, flattened above and below, the upper and lower margins being nearly parallel, obliquely flattened below the periphery; columellar margin broadly dilated, curved and partially

covering the umbilicus; columella curved, with a heavy callus and obtuse tubercle in the center; umbilicus round and deep. The animal is yellowish.

Alt. 1, diam. 2 mm.

Types (No. 27150 Coll. Walker) from the Coosa River at "The Bar" $2\frac{1}{2}$ miles above Yellowleaf Creek, Chilton Co., Ala. Cotypes in the collection of T. H. Aldrich, Geo. H. Clapp, John B. Henderson, Jr., and the Philadelphia Academy.

This species resembles *tantillus* in being spirally striate but differs in being umbilicate and in having a tooth on the columella, as well as in the general shape. It does not resemble *smithii* in any of its special features, and differs from *carinatus* in being more obtusely carinate and in the wider umbilicus and stronger spiral striation.

NEOPLANORBIS CARINATUS n. sp. Pl. IX, figs. 17 and 18.

Shell minute, planorboid, narrowly umbilicate, nearly flat above, convex below, but obliquely flattened below the peripheral carina, which is strong, but rather blunt; pale horn-color; lines of growth fine, closely set and regular, sculptured above by a few fine sub-obsolete spiral lines, stronger towards the periphery; under surface with numerous fine spiral lines heavier than on the upper. Whorls 2, rapidly enlarging; apex sunken; apical whorl somewhat flattened above, convexly rounded at the periphery which, at about the beginning of the body whorl, becomes angulate and then carinate; the body whorl above is slightly convex in the center, but flattened toward the suture, and "pinched out" at the periphery to form the carina; suture well impressed, descending toward the aperture below the periphery; aperture large, much wider than high and auriculated at the periphery by the carina; upper and lower margins flattened and nearly parallel; columellar margin dilated, free, slightly curved back over the small, round umbilicus, and obtusely angled where it joins the basal margin; columella somewhat thickened, with a small obtuse tubercle at about the center.

Alt. 1, diam. 2 mm.

Types (No. 27151, Coll. Walker) from the Coosa river at Duncan's Riffle, Coosa Co., Ala. Cotypes in the collections of T. H. Aldrich, Geo. H. Clapp, John B. Henderson, Jr., and the Philadelphia Academy.

In form the species reminds one of a minute *Planorbis oper-*

cularis Gld., its most prominent characteristic being the nearly plane upper surface with a strong peripheral carina. It resembles *umbilicatus* in being spirally striate and having a columellar tooth, but differs in the greater development of the carina, narrower umbilicus and in having the spiral lines much weaker. It differs from *tantillus* in the greater development of the carina, in the small but round umbilicus, dentate columella and weaker spiral striation. The animal is black.

All these species of *Neoplanorbis* were discovered by Mr. Herbert H. Smith in the fall of 1907. They live on the under sides of stones in the more or less rapid current and in suitable localities are very abundant. Mr. Smith took 50 from one small stone. *Neoplanorbis* seems very local in its distribution. It may be abundant on one shoal and not found at all on another. And on the same shoal, it is frequently restricted to one side of the river or the other.

In his progress down the river in 1907, Mr. Smith did not find *Neoplanorbis* at all, until he reached Cedar Island, Chilton Co., three miles above the mouth of the Yellowleaf Creek, where a single specimen of *umbilicatus* was found.

At "The Bar" two miles further down *umbilicatus* was found in some abundance on stones in a strong current, while at the same place *carinatus* was found in a moderate current. There was no intermingling of the species in these two situations. *Umbilicatus* was not met with below this point.

At Butting Ram Shoals, five miles below, in a moderate current, the catch was almost entirely *carinatus*, the exception being three specimens of *smithii*.

At Higgins' Ferry, seven miles further down stream, in a moderate current, with the exception of a single example of *carinatus*, the several hundred specimens were all *smithii*.

While at Duncan's Riffle seven miles below, the catch contained two specimens of *smithii*, the balance being *carinatus*.

Duncan's Riffle is twenty-four miles by river above Wetumpka, so that, in view of these facts, it is not surprising that *N. tantillus* was not met with at all.

The following key may be of assistance in differentiating the four species of *Neoplanorbis* now known :

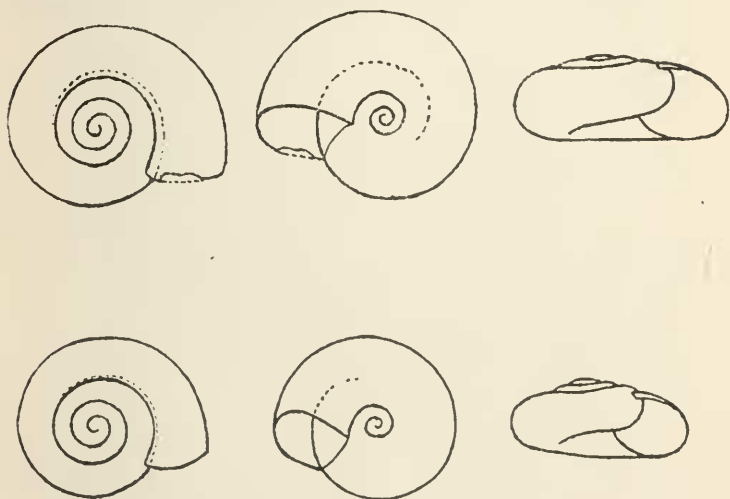
1. Umbilicate, columella dentate 3.
2. Perforate, columella smooth 4.

3. { Periphery carinate, umbilicus narrow *carinatus*.
 { Periphery obtusely angled, umbilicus wider. *umbilicatus*.
 4. { Spirally striate, periphery carinate *tantillus*.
 { No spiral striæ, periphery rounded *smithii*.

VITREA LEWISIANA N. SP.

BY GEO. H. CLAPP.

Shell small, depressed widely, perspective umbilicate, all whorls showing to the apex, umbilicus contained about five times in the diameter of the shell; yellowish-white, translucent, the inner whorls



Upper figures, *Vitrea lewisiana* Clapp. Type, x8.

Lower figures, " *dalliana* 'Simpson' Pils. x8. Miami, Fla.

showing through the body of the shell, highly polished; the delicate growth lines are very regularly spaced and close together, smooth below. Spire much flattened; sutures well impressed, margined; whorls $3\frac{1}{2}$, slightly convex, the last wide. Aperture oblong-lunate, depressed above, lower margin parallel with the base, lip simple.

Gr. diam. $3\frac{1}{2}$, lesser 2.8, alt. $1\frac{1}{2}$ mm.

Type from Monte Sano, near Huntsville, Ala., also found at Wetumpka and Gurley, Ala., so probably extends over the whole eastern part of the state. *Rare*. Collected by Herbert H. Smith.